

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of	)	<b>MAIL STOP</b>
Raiko Milanovic et al.	)	<b>APPEAL BRIEF - PATENTS</b>
Application No.: 10/590,649	)	Group Art Unit: 2121
Filed: January 4, 2007	)	Examiner: Thomas H. Stevens
For: PROCESS CONTROL SYSTEM	)	Appeal No.: _____
AND METHOD FOR OPERATING	)	
A SYSTEM OF THIS TYPE	)	

**APPEAL BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This appeal is from the decision of the Primary Examiner dated April 21, 2010 finally rejecting claims 1-18, which are reproduced as the Claims Appendix of this brief.

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The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

I. Real Party in Interest

This Appeal in the present application is assigned to ABB Research Ltd., by way of assignment recorded in the U.S. Patent and Trademark Office at Reel 018771, Frame 0045.

II. Related Appeals and Interferences

To the best of Appellants' knowledge, there are no other appeals, interferences or judicial proceedings which will directly affect or be directly affected by, or have a bearing on the Board's decision in this Appeal.

III. Status of Claims

Claims 1-18 are pending and appealed in this application. Claims 1-18 were finally rejected in the April 21, 2010 final rejection.

IV. Status of Amendments

No amendments were filed subsequent to the final Office Action.

V. Summary of Claimed Subject Matter

Appellants' independent claim 1 is directed to a process control system comprising measurement devices (Fig. 1, elements 2a, 2b, 2c, Appellants' specification at page 3, line 32 - page 4, line 12) and actuators (Fig. 1, element 3, page 3, line 32 - page 4, line 12). All the measurement devices and actuators contain means for information processing (Fig. 1, element 1, page 3, line 32 - page 4, line 12) and for data interchange (Fig. 1, element 5, page 3, line 32 - page 4, line 12) between the measurement devices and actuators. All the measurement devices and actuators are connected by means for bidirectional data interchange (Fig. 1, elements 4a - 4d, page 4, line 14 - page 5, line 3). A plurality of the measurement devices and actuators have means for data interchange (Fig. 1, elements 4a - 4d,

page 4, line 14 - page 5, line 3) with a service appliance (Fig. 1, element 6, page 3, line 32 - page 4, line 12) which can be connected.

Appellants' independent claim 18 is directed to a process control system comprising measurement devices (Fig. 1, elements 2a, 2b, 2c, page 3, line 32 - page 4, line 12) and actuators (Fig. 1, element 3, page 3, line 32 - page 4, line 12), each of which includes means for information processing (Fig. 1, element 1, page 3, line 32 - page 4, line 12) and for data interchange (Fig. 1, element 5, page 3, line 32 - page 4, line 12) between the measurement devices and actuators, means for interconnecting the measurement devices and actuators for bidirectional data interchange (Fig. 1, elements 4a-4d, page 4, line 14 - page 5, line 3), and means, provided with multiple ones of the measurement devices and actuators, for data interchange with a service appliance (Fig. 1, element 6, page 3, line 32 - page 4, line 12) which can be connected.

Appellants dependent claim 9 is directed to a method for operation of a process control system as claimed in claim 1, wherein data which has been recorded in measurement devices of the system by sensors of the measurement devices and has possibly been obtained by preprocessing is linked data from other devices, and all of the data is stored and is transmitted to respective other measurement devices and to actuators. Data which has been called up from a service device which is connected to the measurement devices or actuators is emitted (Fig. 1, page 4, line 4 - page 5, line 20).

#### VI. Grounds of Rejection to be Reviewed on Appeal

The ground of rejection to be reviewed on appeal is whether claims 1-18 are unpatentable under 35 U.S.C. §102(e) over U.S. Patent No. 6,587,739 to Abrams et al.

## VII. Argument

A. Whether claims 1-18 are unpatentable under 35 U.S.C. §102(a) over U.S. Patent No. 6,587,739 to Abrams et al.

Appellants' independent claim 1 recites, in combination with other claimed features, a process control system comprising measurement devices and actuators. All the measurement devices and actuators contain means for information processing and for data interchange between the measurement devices and actuators. All the measurement devices and actuators are connected by means for bidirectional data interchange.

Such features encompass Appellants' exemplary embodiment as illustrated in Fig. 1 wherein sensors 2a, 2b and 2c and actuator 3 each include a processor 1 and an interface 5. Each are connected via bidirectional data interchange 4a-4d.

On page 2 of the April 21, 2010 Office Action, the Examiner identifies sensor element 230, shown in Fig. 2 of the Abrams patent, as a measurement device and identifies temperature sensor and microcontroller, shown in Fig. 18c, as an actuator. The Examiner goes on to allege that the temperature sensor element 230, shown in Fig. 2, contains means for information processing. The Examiner alleges that this is supported at column 8 lines 7-10 of the Abrams patent. However, this portion relates to controllers and not to the sensor elements 230 of Fig. 2 or the temperature sensor and microcontroller shown in Fig. 18c.

The Abrams patent is directed to an appliance communication and control system. The various devices are capable of receiving and/or sending data over power lines 27 using a power line communications (PLC) protocol. As shown in Fig. 2, each device 200 includes a central processing unit (CPU) 220 and some form of input/output controller 228 coupled to one or more of a set of sensors 230, and actuators, controllers 240, etc. As shown in Fig. 2, the sensors 230 includes an arrow which points towards the I/O 228. Conversely, the actuators, controllers 240 include an arrow that points from the I/O 228 to the actuator, controllers 240. This is a clear indication that the sensors 230, actuators and controllers 240 are not connected by means for bidirectional data interchange. The arrows represent the

direction of communication. The sensors 230 communicate to the I/O 228, a piece of information which is not processed. The processing is performed by the CPU 220.

The Examiner refers to the disclosure in the Abrams patent in col. 6, lines 64-65 which discloses that information will still be available at the appliance and can be retrieved as needed, as evidence of data interchange. However, this refers to controllers and not to actuators or measurement devices. As described in the Abrams patent at column 5, the appliances, which include the sensors and actuators, are connected for bidirectional communication with the console 50 or the PDA 292. It is not the sensors and actuators in the appliances which are connected for bidirectional communication. Each of the sensors and actuators in the Abrams patent are connected to, for example, a microcontroller as shown in Fig. 18c.

In Fig. 18c, the bread maker 1800 includes, for example, lid sensor 1871, temperature sensor 1840, heater control 242 and motor monitor 241. The microcontroller 205 is coupled to and receives input from the sensors. See col. 21, line 35 et seq. However, there is no disclosure, for example, that the lid sensor communicates with the temperature sensor. In the Response to Arguments, the Examiner states "the fact that the lid sensor doesn't communication [sic] with the temperature sensor is immaterial since this feature is not claimed. Claim 1 states 'a plurality, preferably all, of the measurement devices.'" First, the Examiner has confused paragraphs a and c of claim 1. Paragraph a) recites all the measurement devices and actuators contain means for information processing and for data interchange between the measurement devices and actuators. Paragraph c) of claim 1 recites a plurality of the measurement devices and actuators have means for data interchange with a service appliance which can be connected. The Examiner's reference to the phrase "preferably all" relates to paragraph c) not paragraph a) of claim 1 [this phrase no longer exists in claim 1 as a result of amendment]. Further, the fact that the lid sensor doesn't communicate with the temperature sensor is material. Paragraph a) of claim 1 recites all the measurement devices and actuators contain means for information processing and for data interchange between the measurement devices and actuators. Thus, in order for the features of claim 1 to be disclosed in Fig. 18c, the lid sensor and the temperature sensor would have to



include both means for information processing and means for data interchange. In Fig. 18c the lid sensor and the temperature sensor contain neither.

As pointed out by the Examiner in the Response to Arguments, the microcontroller 205 and the temperature sensor communicate. But the temperature sensor and the lid sensor rely on the microcontroller 205 to perform the functions of information processing and the function of data interchange. Thus, the Abrams patent does not disclose all the measurement devices and actuators are connected by means for bidirectional data interchange as in Appellants' independent claim 1. Further, the provision of the CPU 220 or the microcontroller 205 confirms that all the measurement devices and actuators do not contain means for information processing, in combination with the other claimed features of Appellants' independent claim 1.

Appellants' independent claim 18 is allowable for reasons similar to those discussed above with respect to Appellants' independent claim 1.

The remaining claims are dependent claims and are patentable for at least the reasons set forth above. For example, Appellants' dependent claim 9 is directed to a method for operation of a process control system as claimed in claim 1, wherein data which has been recorded in measurement devices of the system by sensors of the measurement devices and has possibly been obtained by preprocessing is linked data from other devices, and all of the data is stored and is transmitted to respective other measurement devices and to actuators. Data which has been called up from a service device which is connected to the measurement devices or actuators is emitted. On page 6 of the Office Action, the Examiner provides a laundry list of measurement devices and sensors and actuators. However, as discussed above, each of the sensors and actuators in the Abrams patent are connected to, for example, a microcontroller as shown in Fig. 18c. All the data which has been recorded in the measurement devices of the system are not stored and transmitted to respective other measurement devices and to actuators as in Applicants' dependent claim 9.

As discussed above, the U.S. Patent and Trademark Office has not established a *prima facie* case in support of the rejection because of the factual deficiencies in the rejection.

In view of the above remarks Appellants' respectfully request the rejection of the April 21, 2010 Office Action be reversed.

VIII. Claims Appendix

See attached Claims Appendix for a copy of the claims involved in the appeal.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date October 14, 2010

By: 

Michael Britton  
Registration No. 47260

**Customer No. 21839**  
703 836 6620

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## VIII. CLAIMS APPENDIX

### The Appealed Claims

1. A process control system comprising measurement devices and actuators wherein
  - a) all the measurement devices and actuators contain means for information processing and for data interchange between the measurement devices and actuators,
  - b) all the measurement devices and actuators are connected by means for bidirectional data interchange, and
  - c) a plurality of the measurement devices and actuators have means for data interchange with a service appliance which can be connected.
2. The process control system as claimed in claim 1, wherein the means for information processing and for data interchange between the measurement devices and actuators are a microcomputer with interface devices for bidirectional data interchange.
3. The process control system as claimed in claim 1, wherein the means for data interchange with a service appliance which can be connected are an interface device for bi-directional data interchange and a plug-in apparatus, with the interface device being designed to provide current data relating to the process state for calling up.

4. The process control system as claimed in claim 1, wherein point-to-point links are produced as means for bidirectional data interchange.

5. The process control system as claimed in claim 1, wherein a bus system, to which all of the measurement devices and actuators are connected, is provided as the means for bidirectional data interchange.

6. The process control system as claimed in claim 1, wherein a laptop or a PDA is used as the service appliance which can be connected.

7. The process control system as claimed in claim 1, wherein the measurement devices and actuators are designed to carry out plausibility checks and diagnoses.

8. The process control system as claimed in claim 1, wherein the measurement devices and actuators are designed for preprocessing of recorded data.

9. A method for operation of a process control system as claimed in claim 1, wherein

- data which has been recorded in measurement devices of the system by sensors of the measurement devices and has possibly been obtained by preprocessing is linked to data from other measurement devices, and all of the data is stored and is transmitted to respective other measurement devices and to actuators, and

- data which has been called up from a service device which is connected to measurement devices or actuators is emitted.

10. The method as claimed in claim 9, wherein self-diagnoses are carried out in the components of the process control system, whose results are likewise stored such that they can be called up by a service device.

11. The process control system as claimed in claim 2, wherein the means for data interchange with a service appliance which can be connected are an interface device for bi-directional data interchange and a plug-in apparatus, with the interface device being designed to provide current data relating to a process state for calling up.

12. The process control system as claimed in claim 11, wherein point-to-point links are produced as means for bidirectional data interchange.

13. The process control system as claimed in claim 12, wherein a bus system, to which all of the measurement devices and actuators are connected, is provided as the means for bidirectional data interchange.

14. The process control system as claimed in claim 13, wherein a laptop or a PDA is used as the service appliance which can be connected.

15. The process control system as claimed in claim 14, wherein the measurement devices and actuators are designed to carry out plausibility checks and diagnoses.

16. The process control system as claimed in claim 15, wherein the measurement devices and actuators are designed for preprocessing of recorded data.

17. A method for operation of a process control system as claimed in claim 16, wherein:

data which has been recorded in measurement devices of the system by sensors of the measurement devices and has possibly been obtained by preprocessing is linked to data from other measurement devices, and all of the data is stored and is transmitted to the respective other measurement devices and to actuators, and

data which has been called up from a service device which is connected to measurement devices or actuators is emitted.

18. A process control system, comprising:  
measurement devices and actuators, each of which includes means for information processing and for data interchange between the measurement devices and actuators;

means for interconnecting the measurement devices and actuators for bidirectional data interchange; and

means, provided with multiple ones of the measurement devices and actuators, for data interchange with a service appliance which can be connected.

## **IX. EVIDENCE APPENDIX**

NONE

## **X. RELATED PROCEEDINGS APPENDIX**

NONE